



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Toshiyuki INAGAKI

Group Art Unit: 1795

Application No.: 10/582,673

Examiner: K. WALKER

Filed: June 22, 2006

Docket No.: 128357

For: FUEL CELL STACK STRUCTURE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This request is being filed with a Notice of Appeal. Review of the August 31, 2010 Final Rejection is requested for the reasons set forth in the attached five or fewer sheets.

Should any questions arise regarding this submission, or the Review Panel believe that anything further would be desirable in order to place this application in even better condition for allowance, the Review Panel is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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Date: November 30, 2010

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REMARKS

I. Status of Pending Claims

Claims 27-29 and 31-39 are pending in this application. All claims stand finally rejected. No amendments are being filed with this request. Claim 27 is the only independent claim.

II. Grounds of Rejection Presented For Review

The following grounds of rejection are presented for review - the Office Action rejects:

(1) claims 27-29 and 35-38 under 35 U.S.C. §103(a) over Schmid et al. (U.S. Patent No. 6,080,503) in view of Araldite 2018 Technical Data Sheet (hereinafter "Araldite");

(2) claims 27 and 32-34 under 35 U.S.C. §103(a) over Schmid in view of Araldite; and

(3) claims 27-29 and 35-38 under 35 U.S.C. §103(a) over Schmid in view of Kye (U.S. Patent Application Publication No. 2004/0197563) based further on Applicant's Remarks filed in the July 27, 2010 Amendment (considered by the Examiner as Applicant's Alleged Admitted Prior Art, hereinafter "AAAPA").

Applicant respectfully submits that the legal and factual bases of rejections contain clear deficiencies.

III. Independent Claim 27 is Patentable Over Schmid in View of Araldite

Regarding rejections (1) and (2), Schmid and Araldite, alone or combined, fail to disclose and would not have rendered obvious the claimed combination of features recited in independent claim 27. The above references fail to disclose and would not have rendered obvious "wherein the adhesive layer has a Young's modulus within the range of 30 MPa to 50 MPa," as recited in independent claim 27.

The Office Action acknowledges that none of the applied references discloses the claimed combination of features including an adhesive at the claimed location and having a Young's modulus within the claimed range of 30 MPa to 50 MPa, but notes that the Young's modulus of Araldite is 16 MPa. Although the minimum claimed Young's modulus is almost twice that of Araldite, the Office Action asserts that the two elastic moduli "are not significantly different from each other." (See page 3 of the Office Action).

The claimed range of Young's modulus and the Young's modulus of Araldite are patentably distinct from one another. The Office Action cites *Titanium Metals Corp. v. Banner*, 778 F.2d 775 (Fed. Cir. 1985), in which claims to a titanium alloy with 0.8% nickel and 0.3% molybdenum were held to be obvious over a prior art reference which disclosed an alloy containing 0.75% nickel and 0.25% molybdenum. (See also MPEP §2131.03 (III)). However, in *Titanium Metals*, the prior art alloy was considered to be close enough to the claimed alloy so as to support a §103 obviousness rejection because "one skilled in the art would have expected them to have the same properties." (*Titanium Metals*, 778 F.2d at 783). In the present case, one skilled in the art would have known that the minimum Young's modulus recited in independent claim 27 and the disclosed Young's modulus do not have the same properties. Rather, the minimum Young's modulus in the claimed range would be nearly twice as stiff as the Young's modulus disclosed in the prior art. Thus, the facts of *Titanium Metals* and the present Application's facts are inapposite, and a Young's modulus of 16 MPa and 30 MPa are significantly different from each other.

IV. Independent claim 27 is patentable over Schmid in view of Kye and AAAPA

Regarding rejection (3), Schmid, Kye and AAAPA, alone or combined, fail to disclose and would not have rendered obvious the claimed combination of features recited in independent claim 27. The above references fail to disclose and would not have rendered obvious "A fuel cell stack comprising ... an adhesive layer ... wherein the adhesive layer has

a Young's modulus within the range of 30 MPa to 50 MPa," as recited in independent claim 27.

The Office Action argues on page 14 that the claimed range of Young's modulus is a result-effective variable, and refuses to afford this feature patentable weight absent any showing of unexpected results. However, Applicant's invention is not directed to the adhesive itself; rather, Applicant's invention is directed to a fuel cell structure that incorporates a known adhesive. That is, while adhesives having a Young's modulus between 30 MPa and 50 MPa are known, such adhesives are not known to have been used with fuel cell structures, as claimed.

The Office Action asserts on page 14 that "[a]s discussed by Applicant, use of an adhesive with the claimed Young's modulus in the fuel cell art is well known." However, Applicant never made any such admission. Rather, Applicant merely argued that the present claims "are directed to a novel fuel cell stack with an adhesive having the claimed Young's modulus, not a method of making such an adhesive or the adhesive itself." (See page 5 of the July 27, 2010 Amendment). Applicant never acknowledged that the combination of the claimed adhesive within the claimed fuel cell structure is known in the art, as alleged by the Office Action.

The Office Action asserts that it is well known in the art to vary the Young's modulus of an adhesive within a fuel cell stack to achieve preferred properties of tensile strength, percent elongation and stiffness. (See page 14 of the Office Action). The Office Action asserts that such a teaching is established by Kye. (See page 14 of the Office Action). Although Kye never discloses the use of its adhesive within a fuel cell stack, the Office Action relies on Schmid to disclose that general adhesives are used within the fuel cell art, and relies on Kye for the teaching that varying the Young's modulus within an adhesive can

produce optimized properties of elongation, stiffness and tensile strength, such that the claimed range of Young's modulus is a result-effective variable.

The Office Action's proposed combination fails to consider the combination of Applicant's claimed features. Neither Kye nor Schmid discloses the use of an adhesive with a Young's Modulus between 30 MPa and 50 MPa in the fuel cell art. Although the various claimed elements may have been known individually, it is well settled that a combination of known components may be patentable. *See, e.g., In re Wright*, 848 F.2d 1216 (Fed Cir. 1988), holding a combination of known mechanical elements to be nonobvious over the prior art, which disclosed the individual elements in isolation but not the combination of the elements.

Indeed, all inventions involve a combination of known elements. As the late Chief Judge Markey (the first Chief Judge of the Federal Circuit) once famously quoted "virtually all inventions are 'combinations,' and ... every invention is formed of 'old elements' Only God works from nothing, Man must work with old elements." (H.T. Markey, *Why Not the Statute?*, 65 J.Pat.Off.Soc'y 331, 333-34 (1983)). Applicant respectfully submits that the claimed combination of features is novel and nonobvious. Such a combination is not disclosed by the prior art and would not have been obvious over the prior art. Withdrawal of the rejections is respectfully requested.

V. Conclusion

For all of the reasons discussed above, it is respectfully submitted that the Final Rejection includes legal and factual deficiencies and that all of the pending claims are in condition for allowance. Because none of the cited references discloses, teaches or renders obvious the features of independent claims 27, withdrawal of the Final Rejection and allowance of this application is respectfully requested.